The Evolving Landscape of the LNG Sector
Four Divisions – One Team

One integrated full-service team for your project to serve you from concept to commercial operations

Ship Broking
• Braemar ACM

Logistics
• Cory Brothers

Finance
• Braemar Naves

Technical Services
• Adjusting
• Engineering
• Marine
• Offshore
Global Coverage
Local Presence

834 employees worldwide | FYE 2018 revenue USD$ 175M  LSE:BMS
Revenue split: Shipbroking 46% | Technical 26% | Logistics 25% | Financial 3%
Energy Demand Growth & Sources
Energy Demand Growth

Units: EJ/yr

Source: DNV-GL (2019)
Oil demand will peak in the 2020s and natural gas will take over as the biggest energy source in 2026.

The world will need less energy from the 2030s onwards owing to rapid energy efficiency gains; forecast indicates primary energy supply will peak in 2032.

Source: DNV-GL (2018)
Natural Gas Still Has a Part to Play

Units: PWh/yr

Source: DNV-GL (2018)
China & India’s Massive Appetite
Demand Growth & Role of Natural Gas

**ENERGY DEMAND GROWTH BY ZONE**

- China
- US
- India
- Other non-OECD Asia
- EU
- Africa
- Middle East
- CIS
- South & Central America
- OECD Asia
- Other

**NATURAL GAS DEMAND**

- US
- China
- Russia
- Iran
- Saudi Arabia
- India
- Canada
- UAE
- Japan
- Mexico

Source: CEDIGAZ (2018)
LNG Consumption Forecast

- Approximately 1/3 of global gas demand growth expected to be supplied from new LNG sources
- Average annual gas demand growth: 7 Bcf/d (50 mtpa)

Source: Wood Mackenzie (Q4 2016)
China & India’s Fast Growth

VARIATION IN NATURAL GAS DEMAND
2016-2040

UNCONTRACTED LNG DEMAND

Source: CEDIGAZ (2018)
LNG Capacity Existing & Developing
LNG Capacity Forecast

Source: SSY (2018)
US LNG Projects Coming Online

- US LNG projected to represent nearly 18% of the global market by 2022, and the 2nd wave of expected projects will push that by another 5% by 2030.

Source: Wood Mackenzie (H1 2018)
New Wave of Projects on the Cusp

- In addition to the US projects, there are a number of projects vying for permitting approvals and financing in 2018 - 2019

<table>
<thead>
<tr>
<th>Project</th>
<th>Country</th>
<th>Startup</th>
<th>Volume (mtpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria LNG Train 7</td>
<td>Nigeria</td>
<td>2020</td>
<td>8</td>
</tr>
<tr>
<td>LNG Canada</td>
<td>Canada</td>
<td>2023</td>
<td>13</td>
</tr>
<tr>
<td>Tortue</td>
<td>Senegal, Mauritania</td>
<td>2021</td>
<td>2.5</td>
</tr>
<tr>
<td>Lake Charles</td>
<td>USA</td>
<td>2023</td>
<td>15</td>
</tr>
<tr>
<td>Sabine Pass Train 6</td>
<td>USA</td>
<td>2023</td>
<td>4.5</td>
</tr>
<tr>
<td>Golden Pass LNG</td>
<td>USA</td>
<td>2023</td>
<td>15</td>
</tr>
<tr>
<td>Rovuma</td>
<td>Mozambique</td>
<td>2024</td>
<td>15</td>
</tr>
<tr>
<td>Qatar Expansion</td>
<td>Qatar</td>
<td>2023</td>
<td>23-30</td>
</tr>
</tbody>
</table>

Source: Reuters
LNG Import Projects
A Rise in FSRU Projects

- Demand for offshore FSRU projects has been surging the past few years to capitalize on lower LNG prices and relatively short project timelines

Source: Goller (2018), King & Spalding (2018)
“Next Generation” of Chinese Import Terminals

**China LNG Receiving Terminals - NOCs**

**China LNG Receiving Terminals – 2nd Tier**

Source: SIA Energy 2016
LNG Trading is Ramping Up

- Traded volumes in financial spot LNG market have increased, but relatively low churn rate indicates liquidity is still far from matching the major gas indices such as Henry Hub, TTF and NBP.

Traded volumes of financial LNG derivatives\(^1\) over 2015-18

<table>
<thead>
<tr>
<th>Year</th>
<th>Tbtu per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0</td>
</tr>
<tr>
<td>2016</td>
<td>10</td>
</tr>
<tr>
<td>2017</td>
<td>50</td>
</tr>
<tr>
<td>2018</td>
<td>150</td>
</tr>
</tbody>
</table>

In April 2018, the traded volume of financial LNG set a new monthly record, equivalent to 3.5 million tons of LNG.

Churn for global price gas markers

- TTF (2016) – Europe: 57
- NBP (2016) – Europe: 22
- JKM – spot\(^2\) (April 2018): 1.3
- JKM – total\(^3\) (April 2018): 0.25

1 Settled against the monthly average of Platts published Japan Korea Marker
2 Churn for one month. Financially traded volume over spot imports into China, South Korea, Japan, and Taiwan
3 Churn for one month. Financially traded volume over total imports into China, South Korea, Japan, and Taiwan

Source: Energy Insights LNGFlow, OIES, press search
Dynamic & Diverse LNG Global Market

North America
- No longer a significant LNG import market following the shale gas revolution
- Mexico will require LNG in the short to medium term

South America
- Declining domestic natural gas production, pipeline trade, and growing demand promote LNG
- LNG demand quite volatile, depending on hydro levels
- Smaller scale potential in the Caribbean

Europe
- Gas-on-gas market provide access to flexibility through liquidity and regasification capacity
- Could operate as market of last resort to the global LNG trade

Middle East
- Stagnating natural gas domestic production and growing demand driving LNG imports
- LNG requirements are seasonal, driven by air conditioning load in the northern hemisphere summer

India and China
- China and India will grow rapidly but constrained by price controls
- Lower GDP growth and weakening power demand

Japan Korea Taiwan
- LNG challenged by increased competition from coal and nuclear
- Limited flexibility as no gas on gas market and slow deregulation

South East Asia
- Growing LNG requirement, as natural gas displaces liquids in power generation but limited flexibility due to fragmented markets

Source: Poten & Partners
Thank You